

Title: Food for Thought

Brief Overview:

This unit involves collecting, organizing, and displaying data. Students use the data collected to analyze a real-life problem, identify possible solutions, and formulate a plan of action. This unit involves the collection of data on lunch menu choices for possible implementation in the school's cafeteria.

Links to Standards:

- **Mathematics as Problem Solving**

Students will demonstrate their ability to solve problems in mathematics including problems with open-ended answers, problems which are solved in a cooperative atmosphere, and problems which are solved with the use of technology.

- **Mathematics as Communication**

Students will demonstrate their ability to communicate mathematically. They will read, write, and discuss mathematics with language and the signs, symbols, and terms of the discipline.

- **Mathematics as Reasoning**

Students will demonstrate their ability to reason mathematically. They will make conjectures, gather evidence, and build arguments.

- **Mathematical Connections**

Students will demonstrate their ability to connect mathematics topics within the discipline and with other disciplines.

- **Number Sense & Operations**

Students will demonstrate their ability to describe and apply number relationships using concrete and abstract materials. They will choose appropriate operations and describe effects of operations on numbers.

- **Statistics**

Students will demonstrate their ability to collect, organize, and display data and will interpret information obtained from displays. They will write reports based on statistical information.

Grade/Level:

Grades 4-5.

Duration/Length:

This unit takes approximately 3-4 days to complete.

Prerequisite Knowledge:

Students should have working knowledge of the following skills:

- Frequency tables
- Estimation
- Addition, subtraction, multiplication, and division of whole numbers

- Recording and analyzing simple data
- Business/Persuasive letter format
- Survey

Objectives:

Students will:

- work cooperatively in groups.
- collect, organize, and display data.
- identify possible solutions for a real-life problem.
- record and analyze data.
- communicate mathematical data through writing.
- use fractions and percents to analyze data.

Materials/Resources/Printed Materials:

- Teacher Resource 1 (Poem)
- Teacher Resource 2 (Rubric)
- Student Resource 1 (Writing Prompt)
- Student Resource 2 (Frequency Table)
- Student Calculators (Optional)

Development/Procedures:

Activity 1:

- Teacher will read the poem, “School Lunch” (Teacher Resource 1).
- Discuss your school’s lunch menu.
- Students generate lists of foods that are liked versus disliked.
- Students will work in groups of 3-4 to list the 5 most desired lunch foods.
- Share results as a class.

Activity 2:

- Compile a class list of the 5 favorite lunch foods to complete a frequency table.
- Based upon the results of the frequency table, survey the class for the order of preference of the 5 favorite lunch foods. (Suggestion: It may be easier for your students if you have them survey students in groups of 10, 20, or 25. Have students convert these results to equivalent fractions and percents.

Performance Assessment:

Students complete the writing to persuade prompt on Student Resource 1. The scoring rubric is found on Teacher Resource 2.

Extension/Follow Up:

Students may write an article for the school newspaper explaining their findings.

Students create a diorama illustrating lunch food items most liked.

Students create a cryptogram for “School Lunch.”

Students create an original rap, song, or play about a favorite food item.

Students create a commercial about a favorite food item to be shown to other classes.

Students conduct a random sampling of the other classes in their school.

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Writing to Persuade Prompt

You and your classmates are tired of the same old lunches offered week after week! You decide to come up with a new and improved menu that will be offered for one week at your school. Survey your classmates to determine what healthy, yet fun, foods they'd like to eat for the week. The top five choices will be considered.

Complete the frequency table highlighting your findings. Present this table to your principal with a letter persuading him to use your food choices for the week.

“School Lunch” by Tracey Fowlkes

School is great, learning's fun
But we don't want food that's on a bun.
No more tuna or ham and cheese
We want pizza and tacos please.
No more broccoli, no more dips
We want burgers and potato chips.
Chicken nuggets and submarines
Add some corn and ice cream.
And we'll have a terrific lunch
That's good for us and fun to munch!

Scoring Rubric

Four Points:

- Correctly organizes and displays a frequency table using all components.
- Correctly uses all of the parts of a business letter.
- Each group member performed assigned task.
- Persuasive arguments are supported by data from the frequency table.
- Work is legible.

Three Points:

- Correctly organizes or displays a frequency table.
- Correctly uses all of the parts of a business letter.
- Each group member did his/her task with a little redirection.
- Persuasive arguments are included.
- Work is legible.

Two Points:

- Generally organized a frequency table.
- Omitted more than one part of a business letter.
- Each group member did his/her task with redirection
- Persuasive arguments are vague.
- Work is difficult to read.

One Point:

- Data not displayed on frequency table.
- Omitted two or more parts of business letter.
- Poor group behavior was displayed.
- Persuasive arguments are vague.
- Work is sloppy and illegible.

Zero Points:

- Data not displayed on a frequency table.
- Omitted three or more parts of a business letter.
- Poor group behavior was displayed.
- Work is sloppy and illegible.